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(19) **United States**(12) **Patent Application Publication**
STEVENS et al.(10) **Pub. No.: US 2022/0144920 A1**(43) **Pub. Date: May 12, 2022**(54) **ENGINEERING MONOCLONAL
ANTIBODIES TO IMPROVE STABILITY AND
PRODUCTION TITER**(71) Applicant: **AMGEN INC.**, Thousand Oaks, CA
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(2013.01); **C07K 231/31** (2013.01); **C07K**
231/24 (2013.01); **C07K 231/21** (2013.01)(57) **ABSTRACT**

Presented herein are methods directed to engineering mono-
clonal antibodies and antibody variants to improve stability
and their production in culture. Specifically, the monoclonal
antibodies can be engineered at heavy chain residue 56
(A_{Ho} numbering) to a glycine, alanine, or serine, and/or
engineered at position 80 (A_{Ho}) to be a hydrophobic residue
such as alanine, isoleucine, phenylalanine, leucine, methio-
nine, or valine.

